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2008 AUG 29 P 2:

AZ CORP COMMISSION
DOCKET CONTROL

August 29, 2008

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

RE: DEMAND SIDE MANAGEMENT SEMI-ANNUAL REPORT
DOCKET NO. E-01345A-03-0437 & E-01345A-05-0526

Dear Sir or Madam:

Pursuant to Arizona Corporation Commission Decision No. 67744, page 21, line 22-24:

> "APS is required to file mid-year and end-year reports on each DSM program. All DSM year-end reports filed at the Commission by APS must be certified by an Officer of the Company."

Enclosed please find the DSM Semi-Annual Report covering the period of January 1, 2008 through June 30, 2008.

If you have any questions or concerns please call me at (602) 250-2709.

Sincerely,

Susan Casady

Susan Casady

Attachments

SC/dst

CC: Brian Bozzo
Barbara Keene
Terri Ford
Jerry Anderson

Arizona Corporation Commission
DOCKETED
AUG 29 2008
DOCKETED BY

ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD: JANUARY THROUGH JUNE 2008

This progress report includes the following information for all APS Demand Side Management (DSM) programs that were in place during this reporting period, including programs for residential, non-residential and low income customers:

- A brief description of the program.
- Program modifications.
- Program goals, objectives, and savings targets.
- Programs terminated.
- The levels of participation.
- A description of evaluation and monitoring activities and results.
- kW and kWh savings.
- Benefits and net benefits, both in dollars, as well as Performance Incentive calculation.
- Problems encountered and proposed solutions.
- Costs incurred during the reporting period disaggregated by type of cost, such as administrative costs, rebates, and monitoring costs.
- Findings from all research projects.
- Other significant information.

Summary pages detailing the program expenses and DSM Electric Savings Benefits are provided in Tables 1 and 2. The Performance Incentive Calculation is shown in Table 3.

ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:
JANUARY THROUGH JUNE 2008

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ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:
JANUARY THROUGH JUNE 2008

Table 1
DSM Program Expenses: January – June 2008

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implementation[1]	Program Marketing	Planning & Admin	Program Total Cost
Residential							
Low Income	$1,458,909	$6,646	$2,596	$61,487	$1,087	$48,966	$1,579,691
Res Existing Homes HVAC	$725,629	$16,810	$78,056	$341,134	$175,294	$20,648	$1,357,571
Res New Home Construction	$416,400	$39,656	$1,661	$142,135	$95,218	$37,840	$732,910
Consumer Products	$1,368,006	$2,104	$1,873	$431,660	$109,761	$62,469	$1,975,873
Totals for Residential	**$3,968,944**	**$65,216**	**$84,186**	**$976,416**	**$381,360**	**$169,923**	**$5,646,045**
Non-Residential							
Large Existing Facilities	$1,321,946	$68,188	$12,921	$534,061	$201,172	$212,140	$2,350,428
Large Non Res New Const	$1,057,419	$10,765	$7,281	$244,944	$101,790	$12,989	$1,435,188
Small Business	$35,037	$188	$1,911	$66,825	$16,141	$1,707	$121,809
Bldg Operator Training	$0	$5,223	$0	$0	$0	$0	$5,223
Energy Information Svcs	$4,763	$0	$0	$13,196	$0	$13	$17,972
Schools[2]	$229,146	$2,235	$2,867	$70,469	$14,574	$0	$319,291
Total for Non-Residential	**$2,648,311**	**$86,599**	**$24,980**	**$929,495**	**$333,677**	**$226,849**	**$4,249,911**
Segment Totals	**$6,617,255**	**$151,815**	**$109,166**	**$1,905,911**	**$715,037**	**$396,772**	**$9,895,956**
				Program Costs			**$9,895,956**
				Measurement, Evaluation, & Research (ME			**$568,695**
				Performance Incentive[3]			**$1,162,739**
				TOTAL			**$11,627,390**

Definitions

Rebates & Incentives - Includes dollars that go toward customer rebates and incentives, installation of low income weatherization and low income bill assistance.

Training & Technical Assistance - Includes all dollars that are used for energy efficiency training and technical assistance.

Consumer Education - Includes dollars that are used to support general consumer education about energy-efficient improvements.

Program Implementation - Program delivery costs associated with implementing the program - includes implementation contractor labor and overhead costs, as well as other direct program delivery costs.

Program Marketing - Includes all expenses related to marketing the program and increasing DSM consumer awareness (direct program marketing costs as opposed to general consumer education).

Planning and Administration - APS costs to plan, develop and administer programs-includes management of program budgets, oversight of the RFP process and implementation contractor, program development, program coordination and general overhead expenses.

Measurement, Evaluation, & Research (MER) -These activities will identify current baseline efficiency levels and the market potential of DSM measures, perform process evaluations, verify that energy-efficient measures are installed, track savings, and identify additional energy efficiency research.

Performance Incentive – Share (%) of DSM net economic benefits (benefits minus cost), capped at 10% of total DSM expenditures, inclusive of the Performance Incentive.

1. Includes costs for Implementation Contractor (IC) for the Small Non-Residential, Non-Residential Existing Facilities, New Construction & Major Renovation and Schools Programs.

2. Schools are allowed to receive funding from other non-residential programs as well. Refer to the subsection on the Schools Program for additional information on total funds allocated to school districts to date.

3. The Performance Incentive is calculated in Table 3 and the methodology/calculation was approved by the ACC in Decision No. 69663.

ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:
JANUARY THROUGH JUNE 2008

Table 2
MER Adjusted* DSM Electric Savings Benefits: January – June 2008

DSM Program	Capacity Savings MW	Annual MWh Savings	Lifetime[1] MWh Savings	Program Cost	Societal Benefits	Societal Costs	Net Benefits
Residential							
Low Income[2, 5]	0.1	557	6,770	$1,579,691	$1,411,824	$1,411,824	$0[3]
Res Existing Homes HVAC	1.1	1,684	24,493	$1,357,571	$1,640,205	$1,512,708	$127,497
Res New Home Construction	2.3	4,770	95,396	$732,910	$5,256,009	$1,019,185	$4,236,824
Consumer Products	7.2	71,116	391,139	$1,975,873	$14,682,931	$3,207,662	$11,475,269
Totals for Residential	**10.7**	**78,127**	**517,798**	**$5,646,045**	**$22,990,969**	**$7,151,379**	**$15,839,590**
Non-Residential							
Large Existing Facilities	2.9	30,330	364,643	$2,350,428	$10,584,130	$4,779,344	$5,804,786
Large Non Res New Const	2.1	29,270	436,577	$1,435,188	$19,312,558	$6,694,040	$12,618,518
Small Business	0.1	2,757	40,239	$121,809	$201,272	$140,747	$60,525
Bldg Operator Training	0.0	256	1,278	$5,223	$43,879	$16,773	$27,106
Energy Information Svcs	0.1	359	5,382	$17,972	$193,000	$48,721	$144,279
Schools	0.2	2,812	41,711	$319,291	$794,293	$303,806	$490,487
Total for Non-Residential	**5.4**	**65,784**	**889,830**	**$4,249,911**	**$31,129,132**	**$11,983,431**	**$19,145,701**
Subtotal	**16.1**	**143,911**	**1,407,628**	**$9,895,956**	**$54,120,101**	**$19,134,810**	**$34,985,291**
Measurement, Evaluation & Research				$568,695			($568,695)
Performance Incentive[4]				$1,162,739			($1,162,739)
TOTAL				**$11,627,390**			**$33,253,857**

1. Refers to savings over the expected lifetime of all program measures.
2. Program Costs include weatherization and bill assistance. Societal Costs do not include bill assistance because it does not contribute to electric savings.
3. Consistent with the ACC Staffs' analysis in Decision No. 68647, the societal benefit is equal to the societal cost, resulting in a benefit to cost ratio of 1.00.
4. As calculated in Table 3.
5. Semi-Annual Reports submitted prior to the July-December 2007 Report inadvertently reported only annual MWh savings for the Low Income Program.
** Per Decision No. 69663, APS is submitting MER adjusted MW and MWh savings, which are utilized in the Net Benefit calculation.*

ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:
JANUARY THROUGH JUNE 2008

Table 3
MER Adjusted* Performance Incentive Calculation

DSM Program	Jan - June 2008 Net Benefit	Year to Date Net Benefit	Year to Date 10% Share
Residential			
Res Existing Homes HVAC	$ 127,497	$ 127,497	$ 12,750
Res New Home Construction	$ 4,236,824	$ 4,236,824	$ 423,682
Consumer Products	$ 11,475,269	$ 11,475,269	$ 1,147,527
Non-Residential			
Large Existing Facilities	$ 5,804,786	$ 5,804,786	$ 580,479
Large Non Res New Construction	$ 12,618,518	$ 12,618,518	$ 1,261,852
Small Business	$ 60,525	$ 60,525	$ 6,053
Bldg Operator Training	$ 27,106	$ 27,106	$ 2,711
Energy Information Svcs	$ 144,279	$ 144,279	$ 14,428
Schools	$ 490,487	$ 490,487	$ 49,049
Subtotal	**$ 34,985,291**	**$ 34,985,291**	**$ 3,498,529**
Measurement, Evaluation & Resear	$ (568,695)	$ (568,695)	$ (56,870)
Total	**$ 34,416,596**	**$ 34,416,596**	**$ 3,441,660**
	Total DSM Spending Year to Date		**$ 10,464,651**
	Max. Performance Incentive base on Spending		**$ 1,162,739**
	Performance Incentive Due this Period		**$ 1,162,739**

The year to date Performance Incentive equals the minimum of either 10% share of net benefits, or 10% of total year to date program expenditures. Approval of the incentive calculation was issued by the ACC in Decision No. 69663.

The Performance Incentive calculation does not include the Low Income Program. Per Staff's analysis in Decision No. 68647, the net benefits for the Low Income program are deemed to be $0.

The Maximum Performance Incentive allowed is 10% of the total spending level, including the performance incentive, as ordered in Decision No. 67744.

** Per Decision No. 69663, APS is submitting MER adjusted MW and MWh savings, which are utilized in the Net Benefit calculation.*

PORTFOLIO PLANNING: DSM MEASUREMENT, EVALUATION AND RESEARCH

Description

On April 12, 2006 in Decision No. 68648, the ACC approved funding for Measurement, Evaluation, and Research (MER) activities to assist in verifying the impact and cost effectiveness of APS' DSM programs. As required per Decision No. 68648, APS filed MER program plans for Staff review on August 16, 2007, with the exception of the EIS MER research plan that was filed on June 24, 2008.

Summit Blue Consulting was hired to provide the DSM program Measurement and Evaluation services. These Measurement and Evaluation activities include, but are not limited to:

- Performing process evaluation research to indicate how well programs are working to achieve their objectives,
- Performing impact evaluation research to verify that energy-efficient measures are installed as expected, measurement of savings on installed projects to monitor the actual program savings that are achieved, and research activities to refine savings and cost benefit models and identify additional opportunities for energy efficiency.
- Tracking savings measurement to monitor the actual program savings that are achieved.
- Research activities to identify additional opportunities for energy efficiency.

The approach for measurement and evaluation of the DSM programs is to integrate data collection and tracking activities directly into the program implementation process.

Program Modifications

Per Decision No. 69663, APS is required to "use measured savings obtained from APS customers by the Measurement, Evaluation, and Research (MER) contractor beginning no later than July 1, 2007; and that the averages of actual measured usage, for both standard and upgraded equipment, should be recalculated by the MER from usage samples for each prescriptive measure based on new measurements from the field no less frequently than every two years."

Summit Blue did a comprehensive MER analysis for each DSM program during the start-up phase of implementation or 2005 – 2007. The resulting MER program reports as a result of this analysis are currently in draft form and will be finalized in the third quarter of 2008. **However, MER adjusted kW and kWh savings estimates are included in the MER reports created by Summit Blue, and are also included throughout this Semi-Annual Report for the January – June 2008 reporting period.**

Program Goals, Objectives and Savings Targets

NA

Programs Terminated

NA

Levels of Participation

NA

Evaluation and Monitoring Activities and Results

kW and kWh Savings
See MER adjusted savings results in each program section and Table 2 above.

Benefits and Net Benefits/ Performance Incentive Calculation
See MER adjusted Net Benefits in Table 3 above.

Problems Encountered and Proposed Solutions
NA

Costs Incurred
Total costs incurred for Measurement and Evaluation during this reporting period were $568,695.

Findings from all Research Projects
NA

Other Significant Information
NA

PROGRAM: ENERGY WISE LOW INCOME WEATHERIZATION

Description
APS' Energy Wise Low Income Assistance Program is designed to improve the energy efficiency, safety and health attributes of homes for customers whose income falls within the defined federal poverty guidelines. This program serves low income customers with various home improvements including cooling system repair and replacement, insulation, sunscreens, water heaters, window repairs and improvements as well as other general repairs. In addition, low income families are provided crisis bill assistance. The program is administered by various community action agencies throughout APS' service territory.

Program Modifications
In the past, the Bill Assistance funds were paid to the Community Action Agencies by APS on a reimbursement basis in conjunction with the Arizona Community Action Association (ACAA). However, this January, ACAA implemented a Fuel Fund with funds from the Arizona Department of Economic Security (DES). The amount of funding available to ACAA from DES was approximately $3 million, but it was only available on a matching funds basis. To support ACAA and leverage the APS Energy Wise program Bill Assistance funds, we advanced $167,866 to ACAA which in turn resulted in a $500,000 match from DES. The $167,866 is still only available to eligible APS customers, but now there are more funds available overall to help customers throughout Arizona. Although most of the community action agencies participate in the ACAA Fuel Fund, Gila County Community Action Agency, the Western Arizona Council of Governments, and the Native American tribes are not involved and continue to operate their Bill Assistance programs on a reimbursement from APS basis. All of the other Community Action Agencies are reimbursed from APS Bill Assistance funds by ACAA.

Program Goals, Objectives, and Savings Targets
- To improve the energy efficiency of homes for customers whose income falls within the defined poverty guidelines.
- To provide customers information on energy management and conservation.
- To provide assistance in paying the electric bill for qualified customers in crisis situations.
- Decision No. 68647 acknowledged the estimates that the Weatherization component of the Energy Wise Program could serve 382 homes per year (based on APS' annual budget of $705,000) and result in reduced energy consumption of 763 MWh per year and a demand reduction of 115 kW per year.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Low Income Program could reduce peak demand by about 0.9 MW and 39,000 MWh over the life of the measures which are expected to be installed from 2008 – 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation

A total of 776 households received assistance during the reporting period, January through June 2008. Please note that a single household may have received more than one type of assistance.

Type of Assistance	Number of Households
Bill Assistance	522*
Health and Safety	0
Repair and Replace	2
Weatherization	252
Total	**776**

* Of these, 339 were assisted via the ACAA Home Energy Assistance Fund.

Evaluation and Monitoring Activities and Results
Weatherization measures must pass the cost effectiveness test that is detailed in the federal government's Weatherization Assistance Program (WAP) rules. These rules allow certain prescriptive measures which vary with the climate zone and type of housing construction. Measures not on the prescriptive list must be assessed by a computer analysis to determine the economic feasibility.

The Arizona Department of Commerce Energy Office (AEO), with information from APS, is analyzing the electric energy used in weatherized homes before and after the weatherization measures are implemented. It takes a year of data before the weatherization and another year of data after the weatherization to get an accurate gauge of the impact of the measures. As the data base grows over time, a more accurate picture of the impact of the weatherization activities will emerge.

Information from the AEO report is provided below:

An analysis of 38 homes was conducted on homes completed July 05 through the end of June 06, utilizing APS and Southwest Gas utility data. The number of homes reviewed was limited for this period due to the inability to include natural gas data for areas not served by Southwest Gas. The AEO is working with the other gas providers to access these data.

Provided are Savings to Investment Ratios (SIR) for total investment from all funding spent (diagnostics, energy measures and health and safety measures) and for energy related measure only (diagnostics and energy measures).

Assumptions

Present value is based on 15 years measure life, discount rate of 3% and a utility cost escalation rate of 3%.

KWH charge of $0.10.

Therm cost of $1.25.

On evaporative cooling conversions to Air Conditioning (AC) only, present value includes water saving of $100 per year.

Results Summary

The combined SIR of all jobs reviewed for funds spent on diagnostics, energy measures and health and safety measures was 1.17.

The combined SIR of all jobs reviewed for funds spent on energy measures only was 1.39.

kW and kWh Savings

Of the 776 households participating in the program, a total of 254 homes received weatherization and/or repair & replace services that contributed to the energy savings.

No. of Homes	kW Savings	Annual kWh Savings	Lifetime kWh Savings
254	84.0	557,226	6,770,296

The final savings are adjusted for line losses (9.8%).

The kW and kWh factors used to calculate the savings are based on data from the AEO study of 150 weatherized homes. The study normalized electric and gas savings into dollars with gas savings equaling about 10% of the total. The present value of the dollar savings was converted to "equivalent kWh" at 8 cents per kWh. The annual energy and demand savings per home in this study are estimated to be 1,998 "equivalent kWh" and 0.3 kW.

Benefits and Net Benefits/Performance Incentive Calculation

The benefits and net benefits are provided in Table 2. The Performance Incentive calculation does not include the Energy Wise Program because, as indicated in Decision No. 68647, this program has a zero net benefit. APS has performed well on this program and should not be penalized for the program. Consequently, the net benefits for the Energy Wise Program for this reporting period as shown in Table 2 are $0. However, the spending on the Energy Wise Low Income Weatherization Program is included in the total spending on which the performance incentive is calculated.

Problems Encountered and Proposed Solutions

No problems were encountered during this reporting period.

Costs Incurred

Costs incurred for this program during the current reporting period are listed below:

ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:
JANUARY THROUGH JUNE 2008

Activity	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Bill Assistance	$167,866	-		-	-	-	$167,866
Health & Safety		-	-	-	-	-	$0
Repair and Replace		-	-	-	-	-	$0
Weatherization	$1,291,043		$2,596	$ 28,151		-	$1,321,790
3rd Party Manager - Arizona Community Action Association	-	-	-	$33,336	-	-	$33,336
APS Program Support	-	$6,646	-	-	$1,087	$48,966	$56,699
Total	**$1,458,909**	**$6,646**	**$2,596**	**$61,487**	**$1,087**	**$48,966**	**$1,579,691**

Findings From All Research Projects
NA

Other Significant Information
The Bill Assistance element of the APS Energy Wise Low Income Weatherization program has been implemented on the Navajo Nation for tribal members residing in APS' territory.

Meetings with Hopi Nation Council representatives and the Inter Tribal Council of Arizona have been held to pursue implementing Weatherization activities on the Hopi Nation. APS is currently waiting for a Memo of Understanding to be signed by the Hopi Council before pursuing implementation.

APS is also supporting a City of Phoenix Weatherization program targeting the 85032 Zip Code (boundaries are Cave Creek Road and 40th St., between Bell Road and Greenway Road), which has the highest disconnect rate of all Phoenix zip codes. This program is providing weatherization, energy efficiency education, and sign-ups in APS' E-3 Low Income Discount rate to the low income residents in this area. The kick-off of the energy efficiency education was on June 10th and resulted in a variety of media exposure including an article in the Arizona Republic and several radio interviews with local Spanish stations such as La Buena Onda 1190 AM.

PROGRAM: RESIDENTIAL EXISTING HOMES HVAC

Description

The Residential Existing Homes HVAC program promotes energy-efficient equipment and proper installation and maintenance of residential heating and air conditioning systems. The program provides training and technical assistance for HVAC contractors and education for consumers about the benefits of energy-efficient heating and cooling systems. Through the APS Qualified Contractor program, APS provides customer referrals to contractors who meet strict program requirements for professional standards, technician training and customer satisfaction.

Currently, the Residential Existing Homes HVAC program has three measures with incentives; AC Rebate, Quality Installation and Duct Test and Repair. In June 2006, APS implemented the AC Rebate measure. This measure builds on the existing APS Qualified Contractor program and offers financial incentives to encourage upgrades to high-efficiency equipment that meets US EPA/DOE Energy Star® energy-efficiency standards.

APS began the Quality Installation measure on August 1, 2007 to optimize the installation of high efficiency equipment that meets the AC Rebate measure requirements. This measure has high standards on air conditioning sizing, airflow and refrigerant charge to ensure that when the equipment is installed it will operate at a high level of efficiency.

The most recent addition (offered to customers Dec. 31, 2007) is the Duct Test and Repair measure that offers financial incentives for our customers to test and, if necessary, repair the duct work in their home.

Program Modifications

During this reporting period several things were changed to improve the program. First, a new "AC Expert" phone number was implemented in conjunction with web site, application form and promotion material changes designed to reduce the number of application failures. One of the biggest reasons customer applications fail is that the equipment they are requesting a rebate for does not meet the program's minimum SEER and EER requirements. To reduce the number of application failures and to give customers (and contractors) an easy way to check if the equipment they are considering qualifies for an APS rebate, the AC Expert phone line was created. APS customers, or HVAC contractors, can call the AC Expert line with the model numbers of the equipment they are considering and they will find out if it qualifies for an AC Rebate. Aps.com was updated to include step by step instructions on how to look up the SEER and EER ratings in the Air Conditioning, Heating, and Refrigeration Institute's (AHRI) database in addition to providing the AC Expert line phone number. The AC Rebate application form was also changed to include the AC Expert phone number in the requirements section. These changes appear to be reducing the failure rate and improving customer and contractor awareness.

The other significant change was an increased number of contractor orientation classes and seminars. Numerous orientation classes on the program were held for both the APS Qualified Contractors and contractors that are not part of that group. Presentations were also done for ACCA tradeshow attendees and separately for ACCA members. These changes appear to have

increased contractor awareness and knowledge of the program and more classes will be held in the fall.

Program Goals, Objectives and Savings Targets
This program uses a combination of financial incentives, contractor training and consumer education to promote high efficiency HVAC systems, the proper installation of this equipment and the testing and repair of the duct work in existing residential homes within the APS service territory.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Residential Existing HVAC Program could reduce peak demand by about 17.1 MW and 814,582 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
In the first half of 2008:

- A total of 2,655 rebates were paid through the Res. Existing Homes HVAC program. That is 1,261 more rebates paid in Jan. – Jun. 2008 than the same time period in 2007. Specifically, APS has paid:
    a. 1,856 of the $250 AC rebates for 14 or 15 SEER/11.5 EER equipment
    b. 188 of the $400 AC rebates for 16 SEER/12.25 EER and above equipment
    c. 488 Quality Installation rebates
    d. 123 Duct Test and Repair rebates.
- There are currently 73 contractors participating in the APS Qualified Contractor program with 13 of those outside the metro Phoenix area. There are APS Qualified Contractors currently serving Casa Grande, Congress, Douglas, Flagstaff, Payson, Prescott Valley, Snowflake, Yuma and Wickenburg.
- Including both metro and non-metro training classes, 429 HVAC technicians participated in APS sponsored training courses in order to meet APS Qualified Contractor program training requirements from January – June 2008. That is 165 more technicians trained during this six months than the same period in 2007.
- APS provided over 7,600 referrals to customers seeking HVAC service, repair or replacement of their home HVAC system in this reporting period. That is 2,300 referrals more than the same time frame in 2007.
- There were 11,072 unique user visits to the APS Energy Survey home energy audit at aps.com.

Evaluation and Monitoring Activities and Results
During the current reporting period the Residential HVAC program MER research data collection and analysis activities conducted by Summit Blue Consulting included:

- Conducted detailed review and analysis of KEMA participation database.

- Revised and updated residential HVAC engineering analysis model including performance of current state-of-the-art in HVAC equipment including dual compressor and very high SEER equipment.
- Revised and updated analysis methodology for estimating savings from Quality Installation and duct leakage measures; currently continuing to improve, adjust and benchmark residential HVAC analysis model.
- Conducted field verification of a sample of high-efficiency equipment rebate participants including verification of quantity, size and efficiency of installed units, and spot measurements of performance variables (e.g., electrical performance, outdoor temperature). Currently implementing end-use metering data collection for sample of high-efficiency equipment rebate participants.
- Conducted in-depth data collection of a sample of high-efficiency equipment rebate participants and participating HVAC contractors to analyze equipment sizing practices and estimate the level of over sizing, including detailed home audit data, Manual J calculations, and equipment size data.
- Preparing plan for conducting detailed analysis of residential duct leakage savings potential study.
- Completed detailed demand and energy savings analysis.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis and developed recommendations to adjust focus of program to provide greater emphasis on Quality Installation and Duct Test & Repair measures.
- Conducted in-depth interviews with equipment distributors in the Phoenix and Tucson markets to explore market demand for program compliant equipment, as an input used in the program net-to-gross analysis.
- Prepared Residential Existing Homes HVAC MER report for 2005-2007 activities.

MER Adjusted kW and kWh Savings*

Incentive Type	Number of Units	Annual kWh Savings per Unit	TOTAL Annual MWh Savings	Est. Measure Life	Total Lifetime MWh	kW Demand Savings Per Unit	Total MW Savings
14 SEER/11.5 EER	1,856	519	963	15	14,449	0.298	0.6
16 SEER/12.25 EER	188	1,072	202	15	3,023	0.243	0.1
Quality Installation	488	749	366	15	5,483	0.562	0.3
Duct Test and Repair	123	1,251	154	10	1,539	1.354	0.2
TOTAL	**2,655**		**1,684**		**24,493**		**1.1**

The final savings are adjusted for line losses (9.8%).

*Includes adjustments to savings as described in the Residential Existing HVAC Program Impact and Evaluation MER Report.

In addition to the savings shown above, the Residential Existing Homes HVAC program includes a number of market transformation efforts such as contractor training and customer education activities designed to transform the market for energy efficiency. These elements of the program produce additional energy savings and benefits that are not quantified.

Benefits and Net Benefits/Performance Incentive Calculation
The MER Adjusted benefits and net benefits are provided in Table 2. The details for the MER Adjusted Performance Incentive Calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
The Summit Blue MER report on this program indicates that rebates for high-efficiency equipment as a stand alone measure do not appear to be cost effective. This is due to: 1) the relatively high minimum federal efficiency standard (13 SEER) leading to lower energy and demand savings margins, 2) the incremental costs for high efficiency equipment remaining high, and 3) very high efficiency (17 SEER and above) equipment not having proportionately higher demand savings relative to energy savings.

APS is in the process of developing revisions to the program designed to improve its cost effectiveness. The biggest change under consideration is requiring a Quality Installation for every rebate by combining the equipment and Quality Installation rebates. The Duct Test and Repair rebate would remain as a stand-alone measure. Combining the equipment and Quality Installation measures would improve the program cost effectiveness by lowering free-ridership and improving the savings margins. The higher savings margin will offset part of the high incremental cost of the equipment. The avoided costs will also be updated which should also improve the program's cost effectiveness. APS is analyzing this, and several other potential revisions with the intent of improving the program's cost effectiveness while also continuing to provide future market transformation. Once finalized, those revisions will be filed with the ACC for consideration.

Costs Incurred
Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Res Existing HVAC	$725,629	$16,810	$78,056	$341,134	$175,294	$20,648	$1,357,571

Findings from all Research Projects
NA

Other Significant Information
The Duct Test and Repair measure was implemented on December 31, 2007. It was designed to be delivered though two channels, the HVAC contractors and HERS (Home Energy Rating System) contractors, who provide comprehensive home energy efficiency audits and repairs.

The following is an example of how the HVAC Contractor channel works when a customer calls about replacing their HVAC unit. When the HVAC contractor is at the house to replace the AC unit, they can also test the duct system and provide repairs, if necessary. This approach is convenient for customers that initially had an equipment problem and also optimizes the energy savings possible at that house through the use of the AC Rebate, Quality Installation and Duct Test and Repair rebates.

The other delivery mechanism is through a more comprehensive home energy audit that would be delivered by certified HERS (Home Energy Rating System) raters. This channel will be branded "Home Performance with Energy Star®" and utilizes the home energy efficiency contractors. The following is an example of when a customer calls in with a high bill complaint. The customer gets referrals to several contractors that can come out to their house and do a full home energy audit that is based on EPA Home Performance with Energy Star® specifications. A key part of the EPA's Home Performance with Energy Star audit is duct testing and repair work. The contractor will provide a recommendation on how the home can be repaired to reduce its energy usage and the customer's cost can be mitigated with the APS HVAC rebates.

During this reporting period, the Home Performance with Energy Star® referral process was not fully in place but is scheduled to be implemented in the fourth quarter of 2008. The HVAC contractor channel was available at the end of 2007.

To implement the measure, APS worked with the EPA Energy Star® program, the Arizona Department of Commerce Energy Office (AEO), the Building Performance Institute (BPI) and the non-profit FSL Home Improvements to offer BPI certification for contractors who offer home performance testing and repair. APS also worked with the AEO and Foundation for Senior Living (FSL) on the testing methods and protocol and the application forms. APS and FSL put together the website and content, customer and contractor brochures, and referral process. APS reviewed the rebate forms with a well respected local HVAC contractor for accuracy and ease of use.

Res. Existing Home HVAC program marketing and consumer/contractor education efforts for this reporting period include:

- Monthly ad placements in HVACR Today newspaper targeted to the HVAC industry. The ads promote the APS AC Rebate, Quality Installation and Duct Test and Repair rebates to contractor and manufacturer/distributor trade allies.
- TV news coverage on KPNX Phoenix and KYMA Yuma. Plus interviews on KPNX Phoenix, KNXV Phoenix, KTVK Phoenix and the Pat McMahon show on KAZ-TV.
- Newspaper articles about the program were published in the Arcadia News, Arizona Business Gazette, Arizona Republic, Blade-Tribune, Buckeye Sun, Business Journal, Copper Country News, Daily Courier, Florence Reminder, HVACR Today, North Central Republic, Sierra Vista Herald, White Mountain Independent and the Wickenburg Sun.
- Radio news coverage aired on KKNT.
- The Southwestern Home Journal insert ran in the Arizona Republic.

- Articles in the March/April (Spring Check-up), April/May (Duct Test and Repair) and May/June (AC Rebates) editions of the APS Lifestyles residential customer newsletter and E News e-mail newsletter.
- Radio ads and live interviews to promote the program ran during the Rosie on the House home improvement program which airs on KTAR-FM in Phoenix and KNST-AM in Tucson. Radio ads also ran on KDKB-FM, KESZ-FM, KFYI-AM, KJZZ/KBAC, KMLE-FM, KMXP-FM, KNIX-FM, KOOL-FM, KPKX-FM, KSLX-FM and KYOT-FM.
- TV ads promoting the program ran on Cox Cable, KASW-TV, KAZT-TV, KNXV-TV, KPHO-TV, KPNX-TV, KSAZ-TV, KTVK-TV, KUTP-TV and Fox Sports during various programs from March through June.
- Seminar and booth at ACCA Tradeshow.
- Presentations on the APS Residential DSM programs to numerous community groups.
- The homepage of aps.com prominently features APS energy efficiency and renewable energy programs. These programs are grouped in one section of the homepage entitled "Green Choice", which is coordinated with the current advertising campaign and makes these programs easier to find for customers.

PROGRAM: RESIDENTIAL NEW HOME CONSTRUCTION

Description
This program promotes high efficiency construction practices for new homes. It offers incentives to builders who meet program energy efficiency standards. The program emphasizes the whole building approach to improving energy efficiency and includes field testing of homes to ensure performance. Participating builders are trained to apply building science principles to assure that high-efficiency homes also have superior comfort and performance. The program also provides education for prospective homebuyers about the benefits of choosing an energy-efficient home and the features to consider.

The program takes advantage of the national Energy Star® brand name, and promotes the EPA/DOE Energy Star® label to prospective homebuyers. To encourage builders to meet the program's high efficiency standards, APS provides builder incentives of $400 per home.

Program Modifications
No modifications for this reporting period.

Program Goals, Objectives and Savings Targets
The program objective is to increase the penetration of homes built to high efficiency standards. The rationale for this program is that residential new construction in the APS service territory, particularly the Phoenix metro area, is one of the biggest drivers of APS' system load growth. It is more cost-effective to work with builders to implement energy efficiency at the time of construction rather than attempt to retrofit efficiency after a home has been built. For many new home measures, such as building envelope improvements, the benefits of energy efficiency upgrades will be sustained for the life of the home to produce very cost-effective savings.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Residential New Construction Program could reduce peak demand by about 9.7 MW and 457,632 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
During this reporting period, APS signed up 2,302 homes that are committed to being built to program standards. At the end of the reporting period, there were 33 homebuilders and 119 subdivisions with 19,459 lots signed up to participate in the program. The current number of total committed lots is slightly lower than the last reporting period due to the fact that many previously committed lots have now been completed and paid incentives, and also due to the slowdown in the construction industry. One participating builder (Empire Homes) declared bankruptcy during this reporting period and another builder has cancelled a number of planned subdivisions so these lots have been removed from the commitment total. The program currently includes Energy Star

communities throughout the APS service territory including the Phoenix metro area, Yuma, Casa Grande, Florence, Prescott, Verde Valley, and Flagstaff.

APS paid homebuilder incentives for 1,041 APS Energy Star® homes that were completed and connected to the APS system during the reporting period. APS completed an estimated 8455 meter sets for new single family homes throughout the APS service territory, so this program represents approximately a 12% market share of homes completed during this reporting period.

APS partnered with SWEEP and Arizona utilities to sponsor a one-day workshop on "Building High Performance Homes" on May 7th. The training was held at the SRP Pera Club and attended by over 50 local builders and members of the homebuilding industry. The agenda focused on case studies and testimonials of local builders who were having success building homes that are significantly more energy efficient than standard construction. The following day, May 8th, APS hosted a half-day sales training conducted by Sam Rashkin, the national director of the ENERGY STAR homes program. The training was attended by over 60 Realtors and sales agents and focused on techniques for selling the features and benefits of high performance homes.

APS held several days of detailed training with participating APS Energy Star® homebuilders. Called "Success with Energy Star®" it trains builders and their subcontractors about techniques for improving construction details that impact efficiency and that allow the home to pass Energy Star® inspections. The training includes customized construction detail drawings and process checklists to ensure that the process is put into place at the job site. During this reporting period, APS held Success with Energy Star training sessions with AB Builders, Perricone Development Group, Jacobson Homes and John Laing Homes. In addition, APS provided sales training and/or technical training assistance to numerous Arizona builders including William Ryan Homes, Ashton Woods, Pulte, Del Webb, and Newland Communities.

Evaluation and Monitoring Activities and Results

During the current reporting period the Residential New Construction Homes program MER research data collection and analysis activities included:

- Conducted detailed review and analysis of APS participation database.
- Conducted detailed review and analysis of HERS rater data and documentation to develop profiles and performance characteristics of participating homes.
- Conducted in-depth interviews with construction superintendents regarding the influence of the program on construction practices.
- Revised and updated residential new home building energy simulation models to reflect population of homes participating in the program.
- Currently in process of planning and conducting field research, measurement and verification of performance of non-participating builder homes.
- Completed detailed demand and energy savings analysis.
- Assessed net-to-gross factors including spillover and free-ridership.
- Prepared Residential New Home Construction MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings*

Measure	Number of Homes Completed	Annual kWh Savings per Home	TOTAL Annual MWh Savings	Est Measure Life (yrs)	TOTAL Lifetime MWh	kW Demand Savings Per Home	TOTAL MW Savings
APS Energy Star Homes	1,041	4,173	4,770	20	95,396	2.0	2.3

*Includes adjustments to savings as described in the Residential New Construction Program Impact and Evaluation MER Report.

In addition, program consumer education and homebuilder training efforts produce significant additional energy savings and benefits that are not quantified here.

Benefits and Net Benefits/Performance Incentive Calculation
The MER Adjusted benefits and net benefits are provided in Table 2. The details for the MER Adjusted Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
This program has been successful to date, despite the residential new construction market decline over the past couple of years. APS first indicated the downturn in this market in our January - June 2006 Semi-Annual DSM Report and this concern is still valid going forward given the potential effect on future program results. The new construction market downturn has even resulted in national builders that were active in the Arizona market filing for bankruptcy during this reporting period. While this downturn could potentially negatively impact this program in the future, it did not significantly impact the program results during this reporting period.

Costs Incurred
Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Res New Home Construction	$416,400	$39,656	$1,661	$142,135	$95,218	$37,840	$732,910

Findings from all Research Projects
No findings to report at this time.

Other Significant Information
In recognition of the outstanding results from the APS Energy Star Homes Program, APS was selected by the US Environmental Protection Agency (EPA) and the US Department of Energy (DOE) as a 2008 Energy Star® Partner of the Year Award winner for "Energy Efficiency Program Delivery". This is a highly coveted award that is bestowed upon less than 1% of all Energy Star® partners each year. APS earned the award for excellence in delivering the APS Energy Star® Homes Program to customers in Arizona and for achieving such significant market penetration and energy savings results.

Program marketing efforts during this reporting period include the following placements:

- Arizona New Homes and Lifestyles – monthly 2-page placement (magazine targeted to prospective homebuyers).
- Newhomeswebzine.com – website targeted to prospective Arizona homebuyers.
- Homestore.com/Move.com – (website for Realtors and homebuyers).
- Distributed APS Energy Star® Home program book for builder sales agents to use in selling the features of Energy Star® Homes to prospective homebuyers. The books are being distributed through model home sales offices of participating APS Energy Star® builders.
- Energy Cost Brochures – point of sale brochures that describe APS Energy Star® Homes features and outline the approximate annual and monthly energy costs per model.
- Homebuyer brochure that is targeted to new buyers which discusses the features and benefits of an Energy Star home. The brochures are being distributed at community events and at participating builder's model home sales offices.
- Information on aps.com. Website homepage has been updated to highlight APS energy efficiency and renewable energy programs. APS Energy Star® Homes program is now featured prominently on aps.com.
- Construction corner at aps.com – webpages targeted to Arizona homebuilders. Completed a re-design of these pages to feature information more prominently to promote builder participation in the ENERGY STAR homes program.
- Article placement in the APS Lifestyles residential newsletter in the April/May issue.
- Sponsorship of the "Rosie on the House" home improvement radio show on KTAR radio station.
- Radio ads aired as part of the "Better Tomorrow Starts Today" ad campaign. Focuses on the energy savings and environmental benefits of APS Energy Star® Homes. Ran during APS sports sponsorships and other placement opportunities.
- Submitted a media plan to ENERGY STAR and the APS program was selected to receive $15,000 in co-op advertising funds from the national ENERGY STAR program. The ENERGY STAR advertising funds are being used to support print ad placements in homebuyer publications in Yuma, Prescott, and Flagstaff areas.
- APS Energy Star Homes TV commercial run during sports and news segment sponsorships and as part of ongoing placement contract with Cox Cable.
- Currently finalizing new model home sales signage that participating builders can customize with their logo to promote the benefits of ENERGY STAR homes. Also finalizing production of a short video to sell builder decision makers on why they should sign up to participate in the ENERGY STAR program.

PROGRAM: CONSUMER PRODUCTS PROGRAM

Description
This program promotes high-efficiency EPA/DOE Energy Star® compact fluorescent lamps (CFLs). CFLs use an average of 75% less energy than standard incandescent bulbs and last up to ten times longer, typically saving consumers more than $30 in energy costs over the life of each bulb. The program offers discounts on CFLs at local retail locations through cooperative agreements with retailers and lighting manufacturers. This provides consumers with reduced retail prices for CFLs at local lighting retailers, with prices typically at or below $0.99 per bulb for standard 60 watt equivalent CFLs.

Program Modifications
No modifications for this reporting period.

Program Goals, Objectives and Savings Targets
Promote the purchase of high-efficiency compact fluorescent lamps and increase the awareness and knowledge of retailers and consumers on the benefits of Energy Star rated lighting products.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Consumer Products Program could reduce peak demand by about 43.7 MW and 2,016,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
During this reporting period, the program resulted in sales of 1,464,818 CFLs through participating retail locations. In addition, during this period, APS distributed 12,338 CFLs during community events and consumer education seminars. During the period, there were over 280 retail outlets throughout the APS service territory where APS customers could purchase discounted CFLs. Participating retailers during this reporting period include: 99 Cents stores, Ace Hardware (select locations), AKA Green, Amazon.com, Bashas, Big Lots, Costco, Dollar Tree, Fry's Foods, Home Depot, Lowe's, Sam's Club, Staples, True Value Hardware (select locations) and WalMart.

Evaluation and Monitoring Activities and Results
During the current reporting period the Consumer Products program MER research data collection and analysis activities included:

- Conducted detailed review and analysis of Ecos participation database.
- Conducted analysis of key factors and performance variables affecting savings and cost-effectiveness including:
    - Residential lighting operating hours
    - Lamp in-service factor (fraction of lamps purchased that are installed vs. put into storage)

- Leakage rate (fraction of lamps sold to customers not in APS service region)
- Effective useful life
- Coincidence with APS system peak
- Lamp incremental cost

- Completed detailed demand and energy savings analysis.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis.
- Prepared Consumer Products MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings*

No. of Units Sold	Wattage	Watts Saved	Hours Per Year	Est. Measure Life (yrs)	MWH Savings Per Year	Lifetime MWh Savings	kW Demand Savings
49,128	9	24	1000	5.5	1,179	6,485	147
22,577	11	23	1000	5.5	519	2,856	68
487,508	13	36	1000	5.5	17,550	96,527	1,950
2,523	14	28	1000	5.5	71	389	10
417,281	14	36	1000	5.5	15,022	82,622	1,669
61,440	14	40	1000	5.5	2,458	13,517	246
37,397	15	35	1000	5.5	1,309	7,199	150
99,904	15	39	1000	5.5	3,896	21,429	400
30,294	18	44	1000	5.5	1,333	7,331	151
11,543	19	44	1000	5.5	508	2,793	58
30,127	20	43	1000	5.5	1,295	7,125	151
158,827	23	60	1000	5.5	9,530	52,413	1,112
27,224	23	76	1000	5.5	2,069	11,380	191
39,380	26	58	1000	5.5	2,284	12,562	276
1,081	32	92	1000	5.5	99	547	10
922	42	84	1000	5.5	77	426	8
	Indirect HVAC Savings (energy) = 3.77 kWh/bulb/yr				5,569	30,629	
	Indirect HVAC Savings (demand) = .0012 kW/bulb						1,790
1,477,156			**TOTAL SAVINGS**		**71,116**	**391,139**	**7,242**

*Includes adjustments to savings as described in the Consumer Products Program Impact and Evaluation MER Report.

Benefits and Net Benefits/Performance Incentive Calculation

The MER Adjusted benefits and net benefits are provided in Table 2. The details for the MER Adjusted Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
No problems were encountered during this reporting period.

Costs Incurred
Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Consumer Products	$1,368,006	$2,104	$1,873	$431,660	$109,761	$62,469	$1,975,873

Findings from all Research Projects
No findings to report at this time.

Other Significant Information
As part of the recognition for being awarded the 2007 and 2008 Energy Star Partner of the Year award, APS was selected to host the 2008 Energy Star Lighting Partner meeting in Phoenix, with more than 200 national lighting experts in attendance at the 3-day conference in February 2008.

During this reporting period, APS kicked off a CFL recycling program in partnership with participating retailers and Veolia Environmental Services, which operates a recycling facility in Phoenix. Customers can bring their burned out CFLs to 18 participating retail locations throughout the APS service territory for recycling. Retailers collect the CFLs and then send them to Veolia, where more than 99% of all materials, including the trace amounts of mercury in CFLs, are reused.

In addition to the bulb sales at retail locations, APS has purchased a supply of CFLs to use for the low income program and for customer education and awareness building purposes. APS uses these bulbs for direct installation through the APS Low Income Weatherization program (2 bulbs provided for each home that is weatherized) and to hand out at local community events and other opportunities to educate the public about CFLs. During this reporting period, APS provided CFLs for a large number of community education and outreach events, including: City of Flagstaff schools CFL exchange event, Sedona Renewable Energy Awareness Day, Glendale Health Fair, Hopi Low Income Summit, Tribal Energy Efficiency Outreach, Greenfest Phoenix, Chino Valley Health Expo, Greening of Pinal County, Valley Forward Livability Summit, Girl Scouts Environmental Fair, Flagstaff Willow Bend Environmental Education Center, Latino Institute, Maricopa Home and Garden Expo, and many other events throughout the APS service territory.

The program conducted 530 retailer visits during the reporting period to provide retailer training, assess inventories of merchandise, check point of purchase displays, address availability of qualified product, and communicate with retail sales staff.

APS conducted extensive customer outreach efforts to promote the CFL program and educate customers. Consumer education events during the reporting period included:

- Jan 2 – Fiesta Bowl
- Jan 31 – ASU Focus the Nation
- Feb 23 – Sedona Renewable Energy Awareness Day (READ)
- Feb 25-27 – National ENERGY STAR Lighting Partner Meeting (hosted by APS)
- Mar/Apr – 13 CFL exchange events with Flagstaff Public Schools
- Mar 29 – National Lights Out
- Apr 3 – Phoenix Coyotes game
- Apr 12 – Live broadcast Rosie on the House show (KTAR radio)
- Apr 17 – CFL Recycling Kick-Off event at Ace Hardware
- Apr 19 – Flagstaff Earth Day event
- Apr 22 – Valley Forward Livability Summit
- Apr 22 – ASU Earth Day
- Apr 25-27 – Maricopa County Home Show
- May 3 – Glendale Green Garden Expo
- May 16-18 – Yavapai County Home Show
- May 31 – Prescott Renewable Energy Awareness Day (READ)
- Jan-Jun – Conducted 18 special events at participating retailers

Advertising and article placements for the CFL program included the following:

- Ran "Green Choice" campaign TV spots featuring CFL program messages on Cox Cable
- CFL radio spot was aired on local sports broadcasts.
- Live interviews, on-air promotions and website advertising with Rosie on the House radio show.
- Information on the homepage of aps.com.
- March/April and April/May issues of the APS Lifestyles newsletter.
- Point of sale signage at all participating retail locations.

PROGRAM: NON-RESIDENTIAL PROGRAM FOR LARGE EXISTING FACILITIES

Description
The Large Existing Facilities Program provides prescriptive incentives for owners and operators of large (over 200 kW aggregated demand) non-residential facilities for energy-efficiency improvements in lighting, HVAC, motors and refrigeration applications. For DSM applications not covered through the prescriptive incentives, the program provides custom efficiency incentives to implement energy-efficiency measures that are evaluated on a case-by-case basis. The program also provides incentives for covering a portion of the cost of an energy study that identifies energy saving opportunities. The program provides educational and promotional pieces designed to assist facility and business owners and operators in making decisions to improve the energy efficiency of their facilities.

KEMA Services Inc. provides turnkey implementation services for this program which was made available to APS customers on March 30, 2006.

Program Modifications
There were no program modifications made to the Non-Residential Large Existing Facilities program during this reporting period.

Program Goals, Objectives and Savings Targets
- Provide DSM opportunities for existing large non-residential customers.
- Promote the installation of high-efficiency technologies including, but not limited to lighting, HVAC equipment, motors, and refrigeration systems.
- Identify and pursue retrofit opportunities within this market segment.
- Increase the efficiency of existing facilities through the testing and retro-commissioning of large central HVAC systems, as well as other end-use measures.
- Promote integrated solutions to the extent possible.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Large Existing Program could reduce annual peak demand by about 25 MW and 2,464,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
The Large Existing Facilities Program remains the strongest performing Non-Residential program since its inception. While incentive payments in the first half of 2008 were less than the previous reporting period, they are more than the incentive payments from the same period last year. Also, the number of applications received by the program increased over the last half of 2007. A total of 349 active applications for large existing incentives were received in this reporting period, from 97 unique customers. Applications from school districts comprise 53 of the 349 applications. From January through June 2008, $1,321,946 in Large Existing program incentives were paid. While

the program offers a pre-notification process to reserve incentive funds, final applications are only processed after the project is completed and all required documentation is submitted and approved by KEMA.

Incentive Status by Fund for Active Applications	Incentives Paid
Large Existing – Prescriptive & Custom	$1,291,585
Large Existing – Studies	$30,361
Total Large Existing Funds	**$ 1,321,946**

During this reporting period, there were four study incentives paid for a total of $30,361. Two of the four study applications resulted in implementation for the associated custom and prescriptive measures. The program has received verbal intent to implement the third study, and to date, the customer has not indicated their intent on the fourth study.

Evaluation and Monitoring Activities and Results

During the current reporting period the Large Existing Facilities program MER research data collection and analysis activities included:

- Conducted detailed review and analysis of KEMA participation database.
- Developed detailed program analysis database and populated database with participation data, measure performance variables, and calculation algorithms.
- Conducted analysis of key factors and performance variables affecting savings and cost-effectiveness of a wide range of measures including:
    - Business lighting performance characteristics including base and energy efficient input wattages, facility operating hours by business type
    - Non-residential HVAC equipment performance characteristics
    - Motor and variable-speed drive performance characteristics
    - Refrigeration system and component performance characteristics
- Conducted further analysis of cool roof technologies as a potential DSM measure as proposed in the 13 Month Filing.
- Currently in the process of preparing plan for assessing the feasibility of including a pump test measure and efficiency improvement measure in the plan.
- Completed detailed demand and energy savings analysis by measure, business type and program component.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis.
- Prepared Solutions For Business MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings

The following table reflects the MER adjusted total energy and demand saving achievements in the first half of 2008 for the Large Existing Facilities. Only savings from projects that are completed and incentives paid are being counted in this report.

MER Adjusted kW and kWh Savings*

kW Savings *	Annual kWh Savings	Lifetime kWh Savings
2,911	30,329,960	364,642,605

The final savings are adjusted for line losses (9.8%).
*kW Savings is coincident peak.

*Includes adjustments to savings as described in the Solutions for Business Impact and Evaluation MER Report.

Benefits and Net Benefits/Performance Incentive Calculation
The MER adjusted benefits and net benefits are provided in Table 2. The details for the MER adjusted Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
The 13-month filing submitted in March 2007 addresses two issues related to the Large Existing Facilities Program in which ACC approval has been requested:

1. **Study Incentive Enhancements:** To date, few customers have submitted retro-commissioning applications. The current program attributes no savings to retro-commissioning studies. In practice, retro-commissioning will yield significant savings from improved operations and system efficiencies. In the 13-month filing, the Company requested that retro-commissioning be categorized as a measure with associated kWh energy savings. Since retro-commissioning studies are more labor intensive and result in direct kWh energy savings once implemented, the 13 month filing requests increasing the retro-commissioning cap from $10,000 **per customer** to $20,000 **per facility**. For all other studies, the 13 month filing requests that the $10,000 cap be changed from a per customer basis to a per facility basis. All study incentives would still apply to the $300,000 per customer annual cap.
2. **Custom Application Enhancements:** The program currently has separate incentives for prescriptive and custom measures. If a customer utilizes both types of measures, the customer must submit separate applications and documentation. In the 13 month filing, APS proposed that in cases where there is an integrated building energy simulation that quantifies the energy savings through the Custom Program, that prescriptive and custom measures would be allowed to be presented in one custom application and treated as a single measure. This change will simplify the application process for customers while assuring that measures would not be double-counted during the application processing.

Costs Incurred
Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement*	Program Marketing	Planning & Admin	Program Total Cost
Large Existing Facilities	$1,321,946	$68,188	$12,921	$534,061	$201,172	$212,140	$2,350,428

Findings from all Research Projects

NA

Other Significant Information

During the first half of 2008, program development activities continued to focus on increasing program participation and leveraging program experience by developing technical resources and advertisements to engage and educate the public. These activities include the following:

1. Trade Ally Development: Trade Ally recruitment continues to focus on one-on-one development and training. Additional recruitment efforts have been placed on developing partnerships with professional associations within the energy and contracting industry. These alliances will significantly increase the program's exposure to contractors and other potential trade allies.

In April, APS began a partnership with Association of Energy Engineers to help promote and manage registration of the APS Technical Training series. The partnership compensates AEE for providing APS with turnkey registration support. In addition, AEE provides access to their membership to promote both the trainings and the Solutions for Business program.

APS has also partnered with the Air Conditioning Contractors' Association (ACCA) board on the ACCA Professional Air Conditioning Contractor Certification Program. The program will provide training to air conditioning contractors, who will gain valuable knowledge on diagnosing and correcting system problems in the commercial market. All attendees will be provided with trade ally training and contractors who successfully complete the course will become Solutions for Business Trade Allies. The ACCA board has developed the training materials and will provide assistance with registration and marketing to their full membership.

There were nineteen general information meetings held with potential trade allies. These meetings focused on providing energy efficiency education and program information to potential trade allies. Seven in-depth training sessions were held with trade allies, resulting in five new trade allies approved during the reporting period. At the end of this reporting period the program had a total of 29 trade allies.

2. Customer awareness and Advertising: One-on-one meetings were held with 211 customers to identify potential projects, and help them move forward with existing ones. In addition to meetings in the metro area, meetings with customers were held in Flagstaff, Casa Grande, Prescott and Yuma.

During the reporting period, outreach efforts focused on finding high-value opportunities to provide the public with program information and energy efficiency education. This was accomplished with the purchase of advertising and editorial space in a number of publications.

- Several print advertisements were developed to reach specific markets including healthcare, commercial real estate/offices and contractors
- Advertising and article placements for the APS Solutions for Business Program included the first issue of the Phoenix Business Journal's Environmental Sustainability Insert, the Phoenix Chamber Impact magazine "ask the expert" feature, AZRE magazine Commercial Executive magazine, Arizona Republic "green" issue, HVACR Today and Electric Times
- Program information was provided in APS's Success Newsletter billing insert
- Enhancements and updates were also added to the APS Energy Survey site. Added features were links to the Solutions for Business Website and specific ties to the rebates APS offers their customers. Language and technical specifications were also updated to the latest energy efficiency marketplace.

3. Generate Program Awareness through key events: Trade shows and conferences included the following:

- World Wide Technology – "Greening It – for the IT Industry"
- NAIOP Green Building Conference in March
- Southwest Facilities Management Show in April

4. Expanding Technical and Training Resources:

APS' Technical Training Series continued to grow during the first half of 2008. Materials were developed for each training session, including class notebooks for participants, class evaluations, invitation fliers, and certificates of completion.

Classes held in the 1st half of 2008 included 148 paid attendees:

- ***Energy Studies and Benchmarking with ENERGY STAR***, held January 10
- ***Federal Tax Incentives for Energy Efficiency and Solar*** on Feb 28
- ***Chillers*** on April 2
- ***Heating, Ventilating and Air Conditioning (HVAC)*** on May 7
- **Solar Class** training format was used by the APS Renewables programs in a ***Solar*** class on June 18. The Solutions for Business program was presented as part of this program.

In addition to the technical training series, the following program materials were developed:

- Lighting fact sheet
- Scottsdale Healthcare Case Study

PROGRAM: NON-RESIDENTIAL NEW CONSTRUCTION AND MAJOR RENOVATIONS

Description
The Non-Residential New Construction and Major Renovations program includes three components: design assistance, custom efficiency, and prescriptive measures. Design assistance involves efforts to integrate energy-efficiency into a customer's design process to influence equipment/systems selection and specification as early in the design process as possible. Custom efficiency provides incentives for large non-residential customers and provides feasibility studies to assess the savings from complex applications. Prescriptive incentives are available for energy-efficiency improvements in lighting, HVAC, motors and refrigeration applications.

KEMA Services Inc. provides turnkey implementation services for this program which was made available to APS customers on March 30, 2006.

Program Modifications
There were no program modifications made to the New Construction program during this reporting period.

Program Goals, Objectives and Savings Targets
- Promote integrated design and integrated analysis of alternative high-efficiency design packages through design assistance in new construction and major renovation applications.
- Assist the customer design team in examining alternative high-efficiency design packages through the provision of the design incentive.
- Encourage facility-specific efficiency improvements through custom incentives that are otherwise difficult to cover in a prescriptive program.
- Encourage the integrated systems approach to incorporating energy-efficiency improvements in new construction and major renovation projects.
- Promote integrated energy efficiency solutions where possible to capture interactive effects and synergistic savings opportunities.
- Train commercial qualified contractors to meet APS' standards for installation and operation of high efficiency systems.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Non-Residential New Construction Program could reduce annual peak demand by about 5 MW and 489,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
The New Construction program continued to experience increased participation during the first half of 2008. After a slow start in the first 2 years of the program associated with long lead times for new construction, this program is approaching the incentive payment levels of the Large Existing program. A total of 79 applications for New Construction incentives have been received, from 45 unique customers. Twelve of the 79 applications are from school districts. In the first half

of 2008, $1,057,419 in New Construction incentives were paid. While the program offers a pre-notification process to reserve incentive funds, final applications are only processed after the project is completed and all required documentation is submitted and approved by KEMA.

Incentive Status for Active Applications	Incentives Paid
Large New Construction – Prescriptive, Custom & Design Assistance	$1,057,419
Large New Construction – Commissioning Studies	$0
Total Large New Construction Funds	$1,057,419

During this reporting period, there were two design assistance incentives paid for a total of $12,875. One of the applications resulted in implementation for the associated measures, and the other customer has not informed the program about implementing the associated measures to date.

Evaluation and Monitoring Activities and Results

During the current reporting period the Non-Res New Construction program MER research data collection and analysis activities included:

- Conducted detailed review and analysis of KEMA participation database.
- Developed detailed program analysis database and populated database with participation data, measure performance variables, and calculation algorithms.
- Conducted analysis of key factors and performance variables affecting savings and cost-effectiveness of a wide range of measures including:
    - Business lighting performance characteristics including base and energy efficient input wattages, facility operating hours by business type
    - Non-residential HVAC equipment performance characteristics
    - Motor and variable-speed drive performance characteristics
    - Refrigeration system and component performance characteristics
- Completed detailed demand and energy savings analysis by measure, business type and program component.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis.
- Prepared Solutions For Business MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings

The following table reflects the MER Adjusted total energy and demand saving achievements in the first half of 2008 for the Large New Construction Program. Only savings from projects that are completed and incentives paid will be counted in this report.

MER Adjusted kW and kWh Savings*

kW Savings *	Annual kWh Savings	Lifetime kWh Savings
2,065	29,270,340	436,577,018

The final savings are adjusted for line losses (9.8%).
*kW Savings is coincident peak.

*Includes adjustments to savings as described in the Solutions for Business Program Impact and Evaluation MER Report.

Benefits and Net Benefits/Performance Incentive Calculation

The MER adjusted benefits and net benefits are provided in Table 2. The details for the MER adjusted Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions

The Studies and Custom Application issues described in the Large Existing section apply to this program as well.

Costs Incurred

Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement*	Program Marketing	Planning & Admin	Program Total Cost
Large Non Res New Const	$1,057,419	$10,765	$7,281	$244,944	$101,790	$12,989	$1,435,188

Findings from all Research Projects

NA

Other Significant Information

During the first half of 2008, program development activities focused primarily on increasing program participation. Specific activities include the following:

Market Outreach:

In addition to many of the Marketing Outreach activities described for the Large Existing program, marketing activities associated with the New Construction program focused on the most likely participants: Owner-occupied buildings, government buildings (schools, county, city, state), and signature projects. Unlike tenant occupied or spec buildings, the developers of these owner-occupied buildings are more likely to incorporate the long-term operating costs when evaluating construction options. They are more willing to make the investment in energy efficiency.

New Construction projects have been identified and approached on a number of fronts. During this reporting period the Solutions for Business program made significant contacts with the contractor community, and worked with developers and contractors throughout the project development cycle, and have been actively engaged in a pipeline list of 43 new construction projects. Some specific examples of New Construction outreach include:

- Monthly networking at construction industry association meetings, including the Alliance for Construction Excellence (ACE), the Arizona chapter of the US Green Building Council, and BOMA meetings. This attendance is an important part of lead development for future projects that could participate in the program. It also helps to identify and recruit potential Trade Allies into the program.
- Project specific meetings with Architecture and Engineering firms, Developers, Contractors and Customers. In the first half of 2008, APS Solutions for Business program staff held approximately 29 such meetings.

PROGRAM: SMALL BUSINESS PROGRAM

Description
The Small Non-Residential Program provides prescriptive incentives for small non-residential customers (≤200 kW of aggregated demand) for energy-efficiency improvements in lighting, HVAC (heating, ventilation, and air conditioning), motors, and refrigeration applications through a simple and straightforward mechanism for program participation. In addition, the program provides educational and promotional materials designed to assist building owners and lease-holders in making decisions to improve the energy-efficiency of their facilities.

KEMA Services Inc. provides turnkey implementation services for this program which was made available to APS customers on March 30, 2006.

Program Modifications
There were no program modifications made to the Small Business program during this reporting period.

Program Goals, Objectives and Savings Targets
- Provide Demand Side Management opportunities for small non-residential customers
- Promote the installation of high-efficiency lighting, packaged HVAC equipment, motors, and refrigeration systems.
- Increase the availability of trained and qualified contractors and service technicians who are knowledgeable about systems performance issues, proper testing, operation and commissioning techniques, and the importance of energy and comfort conditioning benefits of systems that are properly installed and operated.
- Promote cross-training and energy-efficiency assessment and referral opportunities among HVAC and lighting contractors.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Small Business Program could reduce annual peak demand by about 4.9 MW and 227,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
Incentives paid through the Small Business program declined in this reporting period in spite of significant and focused outreach to the small business segment since program inception. As reported in previous Semi Annual Reports, the small business sector is difficult to reach and often requires greater incentives than other markets. A total of 31 applications for Small Business incentives were received from 27 unique customers. From January 1 through June 30, 2008, $35,037 in Small Business program incentives were paid. While the program offers a pre-notification process to reserve incentive funds, final applications are only processed after the project is completed and all required documentation is submitted and approved by KEMA.

Incentive Status for Active Applications	Incentives Paid
Small Business – Prescriptive and Design Assistance	$35,037

During this reporting period, an existing small school customer applied for Design Assistance associated with an expansion that, if implemented, would re-classify them as a large customer. Since this is currently a small customer, the $7,500 incentive was paid out of the Small Business budget. This customer has verbally expressed their intent to implement the results of this study.

Evaluation and Monitoring Activities and Results

The research plan for the Small Business program is incorporated within the Solutions for Business MER Research Plan and includes activities to be undertaken in support of the Large Existing Facilities, Small Business, and Schools programs. MER research data collection and analysis activities conducted specifically for the Small Business market include:

- Conducted detailed review and analysis of KEMA participation database.
- Developed detailed program analysis database and populated database with participation data, measure performance variables, and calculation algorithms.
- Conducted analysis of key factors and performance variables affecting savings and cost-effectiveness of a wide range of measures including:
    - Business lighting performance characteristics including base and energy efficient input wattages, facility operating hours by business type
    - Non-residential HVAC equipment performance characteristics
    - Motor and variable-speed drive performance characteristics
    - Refrigeration system and component performance characteristics
- Completed detailed demand and energy savings analysis by measure, business type and program component.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis.
- Prepared Solutions For Business MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings

The following table reflects the total energy and demand saving achievements in the first half of 2008 for Small Businesses. Only savings from projects that are completed and incentives paid will be counted in this report.

MER Adjusted kW and kWh Savings*

kW Savings *	Annual kWh Savings	Lifetime kWh Savings
83	2,756,550	40,239,233

The final savings are adjusted for line losses (9.8%).
*kW Savings is coincident peak.

*Includes adjustments to savings as described in the Solutions for Business Program Impact and Evaluation MER Report.

Benefits and Net Benefits/Performance Incentive Calculation
The benefits and net benefits are provided in Table 2. The details for the Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
Low participation in this program remains the key challenge even though focused marketing has been implemented. This challenge is consistent with other DSM markets, which is why APS proposed modifications to the program in the 13-Month filing. These modifications include reducing the "small business customer" classification to include customers that have 100 kW or less of aggregated monthly demand, and increasing incentives for some measures under a "Direct Install" program as proposed in APS' 13-Month Filing which is pending ACC approval.

Costs Incurred
Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement*	Program Marketing	Planning & Admin	Program Total Cost
Small Business	$35,037	$188	$1,911	$66,825	$16,141	$1,707	$121,809

Findings from all Research Projects
NA

Other Significant Information
In addition to many of the Marketing Outreach activities described for the Large Existing program, marketing activities associated with the Small Business program leveraged small business associations such as Chambers of Commerce as well as development of program education and information to assist small businesses. During the first half of 2008, special emphasis was placed on developing program materials in Spanish, as this is an important segment of the small business market.

- Participation at the "AzBizGreen" the Arizona Minority Business Conference put on by ASU on January 16th.
- Program outreach to small business in the non-metro areas included trips to Coolidge and San Luis. In Coolidge, a presentation was made to the Coolidge Rotary over breakfast. In San Luis, a presentation was made to the San Luis Chamber of Commerce. Spanish materials were distributed at the presentation in San Luis.
- A presentation was made to the Scottsdale Convention and Visitors Bureau to a combination of small businesses and hotels.
- Other outreach includes: our Ask the Member column in the Phoenix Chamber of Commerce Impact Magazine, the column in the Phoenix Business Journal Sustainability Section and our ad in the publication of the SBA Small Business Resource Magazine

- The Small Business "To Do List" ad was submitted in February to run in the March issues of the Tempe, Phoenix, Casa Grande, Flagstaff and Glendale Chamber newsletters. This was also run in the Feb 22 and Feb 29 issues of the Phoenix Business Journal.

PROGRAM: BUILDING OPERATOR TRAINING (BOT) PROGRAM

Description
The Building Operator Training Program (BOT) which was made available to APS customers on March 15, 2006, provides training incentives for building operators (managers) and facility maintenance technicians on energy-efficient building operating and maintenance practices. Program training is provided through a cooperative effort with the Electric League of Arizona (ELA) in support of their "Institute for Facility Management Education" program, which includes industry expert training targeted to reach facility managers and building operators of medium to large commercial and industrial facilities. The ELA issues a certificate of completion for participants that successfully complete Facility Maintenance Technician Training and Building Operator Training.

Program Modifications
For the first two years of the Solutions for Business program (2006 and 2007), APS had the Electric League market these classes under their Institute. Since the beginning of 2008, APS now markets these classes under the APS Solutions for Business website, flyers and training banner. The Electric League of Arizona will continue to administer these classes.

Program Goals, Objectives and Savings Targets

- Promote operation and maintenance practices that increase the energy-efficiency of commercial and industrial facilities.
- Help participants understand general utility rate concepts and energy consumption.
- Institute a preventative maintenance program in their facility, which includes written maintenance logs that must be completed periodically. Include checks for efficient equipment operation (i.e., economizer/dampers for leaks, coil cleaning, air filter cleaning, system balancing, controls, etc.).
- Learn how to perform an energy audit of their facility and identify savings opportunities
- Learn to create reports for management that justify energy-efficiency capital expenses intended to produce O&M savings.
- Improve purchasing requirements by knowing what to look for when repairing or replacing equipment, and how to calculate the payback of energy savings associated with purchase options; and
- Provide a mechanism for channeling participation to the prescriptive and custom incentive portion of the APS Solutions For Business Program.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the BOT Program could reduce annual peak demand by about 0.4 MW and 45,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation

The BOT Program had two APS customer participants in the Spring of 2008 Building Operator Training, and both successfully received a passing grade from the ELA and received their BOT Certificate of completion. The training subsidy paid to the ELA to cover the tuition subsidy for APS customer participation totaled $1,195 or $597.50 per participant.
The Facilities Maintenance Training (FMT) session had ten APS customer participants in the Spring of 2008, of which nine participants successfully received a passing grade from the ELA. The FMT subsidy paid to the ELA to cover the tuition subsidy for APS customers was $4,028 or $447.50 per passing customer.

Evaluation and Monitoring Activities and Results
During the current reporting period the Building Operator Training program MER research data collection and analysis activities included:

- Conducted interviews with program administrators and the implementation contractor.
- Conducted follow-up surveys with training participants to assess what operations and maintenance energy efficiency actions they've taken as a result of participating in the program.
- Completed demand and energy savings analysis of O&M measures adopted by participants.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis.
- Prepared BOT MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings*

Participants	Est.Measure Life	kWh Savings per Year*	Lifetime kWh Savings	kW Demand Savings**
BOT = 2	15	46,471	232,355	6.6
FMT = 9	15	209,119	1,045,599	29.9
Total =11		255,590	1,277,954	36.5

*Includes adjustments to savings as described in the BOT Program Impact and Evaluation MER Report.

**Annual energy and demand savings per participant approved equals 6,718 kWh and .87 kW. kW Savings is coincident peak. All final saving values are adjusted for line losses (9.8%).

Benefits and Net Benefits/Performance Incentive Calculation
The benefits and net benefits are provided in Table 2. The details for the Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
It should also be noted that participation levels over the past few years has decreased significantly. The draft BOT MER Report for 2005 – 2007 indicates that the BOT program may not be cost effective as a stand alone program. However, the BOT Program is still a useful learning

tool to help participants manage and operate their facilities more efficiently. Therefore, we are recommending that the BOT Program be incorporated into the APS Training Series for the Large Existing Facilities Program, and that the subsidy to participants be continued. The Electric League of Arizona will continue to administer these classes.

Costs Incurred
Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Building Operator Training	$0	$5,223	$0	$0	$0	$0	$5,223

Findings from all Research Projects
NA

Other Significant Information
Both the Facility Maintenance and the Building Operator Training Programs have been ongoing for a number of years (beginning Fall of 2002 and 2003 respectively) prior to the ACC interim approval of tuition reimbursement for these programs in 2006. During that time, the Building Operator Training Program had been administered and marketed under the Electric League of Arizona's Institute for Facility Management Education. For the first two years of the Solutions for Business program (2006 and 2007), we continued to have the Electric League market these classes under the Institute. Since the beginning of 2008, SRP became the sponsor of the Building Operator Training Classes. As the sponsor of the BOT Program, all marketing material, advertising and classroom material now has the SRP logo. Because this can lead to confusion with APS customers, APS now markets the BOT and FMT classes under the APS Solutions for Business Program. The Solutions for Business marketing is comprised of website, flyers and training banners.

PROGRAM: ENERGY INFORMATION SERVICES (EIS) PROGRAM

Description
The EIS Program which was made available to APS customers on November 16, 2006, helps large customers (>200 kW) save energy by giving them a better understanding and control of their facilities' electric use. EIS provides data not only regarding usage and demand, but also when, where and how much power is used in specific areas of each facility. This detailed information allows customers to fine-tune equipment use and operations and to document the impact of those changes. Participating customers monitor their electric usage through a web-based energy information system that allows them to receive historical (previous day) 15 minute usage and demand graphics. This information can be used to improve or monitor energy usage patterns, reduce energy use, reduce demands during on-peak periods and better manage their overall energy operations.

APS is encouraging customers to take advantage of EIS by providing a one-time incentive of up to a maximum of $900 or 75% of the cost of installing a meter and communications equipment necessary to participate in the program.

Program Modifications
No modifications for this reporting period.

Program Goals, Objectives and Savings Targets

- Provide monthly energy usage information to large non-residential customers.
- Identify strategies to lower energy cost by reducing energy usage and demand.
- Educate EIS program participants about utility rate concepts and how managing or reducing their energy consumption through energy-efficiency measures and operational practices can reduce their energy expenses.
- Teach participants how to download billing history information and create spreadsheets to chart and graph their energy use, as well as identify consumption trends and savings opportunities.
- Educate EIS participants about creating reports for management that justify energy-efficient capital expenses intended to produce operations and maintenance (O&M) savings; and
- Facilitate analysis of what-if scenarios to help large facility managers assess the benefits of capital improvements or operating adjustments to improve energy-efficiency.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the EIS Program could reduce annual peak demand by about 0.4 MW and 50,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation

The EIS program started in late 2006 with participation not starting until the Fall of 2007, at that time participants totaled three APS customers with 10 meters.
During this reporting period, APS added seven customers with 19 meters installed. Installed meters will gather data to be utilized on the web-based energy information system. At the end of the reporting period, there are 16 customers who have showed interest in the EIS program and are working on getting approval to move forward with the EIS program.

During the reporting period the incentive level for participation was $4,763. The incentive value is reported on the customer invoice as a discount to the initial cost of setting up the EIS System.

Evaluation and Monitoring Activities and Results
During the current reporting period the EIS program MER research data collection and analysis activities included:

- Conducted interviews with program administrators and the implementation contractor.
- Conducted a review of program processes and participation to date.
- Prepared high level overview for the program.

MER Adjusted kW and kWh Savings*

Meters	Est. Measure Life (yrs)	kWh Savings per Year**	Lifetime kWh Savings	kW Demand Savings **
EIS = 29	15	358,764	5,381,457	44.9

*Includes adjustments to savings as described in the EIS Program Impact and Evaluation MER Report.

** Annual energy and demand savings per participant approved equals 11,267 kWh and 1.41 kW. The kW Savings listed above represent the savings at the customers' site. All final saving values are adjusted for line losses (9.8 %). Also included in the savings estimate are 10 meters installed in late 2007,where the savings were not reported in the last Semi-Annual Filing.

Benefits and Net Benefits/Performance Incentive Calculation
The benefits and net benefits are provided in Table 2. The details for the Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions
The Energy Information Services (EIS) program customer incentive caps were designed around the basis of a one meter EIS application costing a maximum of $1200. Based on a limit of 75% incentive to incremental cost factor that was used throughout the Non-Residential incentive program design, the maximum incentive per customer was set at $900. However, most Non-Residential customers have more than one meter. The Company has received feedback from one of our large government segment customers stating that this customer cap does not make sense for them since they have approximately 300 meters. They would like to see the program cap be raised to recognize the fact that program participants will install EIS on multiple meters within their domain.

The Company, through the 13 Month Filing, is now recommending that the EIS program incentives be expanded to allow more incentives for those customers with multiple meters. However, the Company still needs to insure that one customer does not dominate the incentives. Therefore, APS recommends that any one EIS customer be capped at $12,000 (5% of the original EIS incentive budget) over any one year. In addition, this EIS incentive would be included in the total large customer DSM incentive cap of $300,000 per year.

Costs Incurred

Costs incurred for this program during the current reporting period are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement	Program Marketing	Planning & Admin	Program Total Cost
Energy Information Services	$4,763	$0	$0	$13,196	$0	$13	$17,972

Findings from all Research Projects

NA

Other Significant Information

NA

PROGRAM: SCHOOLS PROGRAM

Description
The Schools program includes a set-aside budget for schools and provides assistance in reducing the energy used in school buildings, including public, private and charter schools. The incentives available for schools include the same DSM measures that are available for all non-residential customers.

KEMA Services Inc. provides turnkey implementation services for this program which was made available to APS customers on March 30, 2006 and includes a grant to the Arizona Department of Commerce Energy Office to provide outreach to rural school districts.

Program Modifications
No modifications for this reporting period.

Program Goals, Objectives and Savings Targets
- Maximize the energy savings that can be attained with available DSM funds by providing schools incentives to upgrade lighting, HVAC, and refrigeration systems.
- Provide educational and training materials to aid schools in other energy conservation projects.
- Provide design assistance, commissioning and energy feasibility incentives to aid schools in identifying energy savings opportunities.
- Provide incentives for other cost effective DSM projects by allowing schools to participate in any Non-Residential DSM Program.

APS' analysis of this program, as filed on December 28, 2007 in the APS Demand Side Management Program Portfolio Plan Update 2008-2010, estimates that the energy efficiency savings expected to result from the Schools Program could reduce annual peak demand by about 2.8 MW and 212,000 MWh over the life of the measures which are expected to be installed from 2008 - 2010.

Programs Terminated
No programs were terminated during this reporting period.

Levels of Participation
In the first half of 2008, a total of 66 applications from schools were received, representing 21 unique school districts. To date, schools have had a healthy level of participation in the program. While school districts comprise less than 8% of APS's non-residential energy use, to date they have received 25% of the paid program incentive funds for their non-residential energy efficiency projects.

The self-reported size of the school entity, based on the number of students as submitted on approved applications received in this reporting period is:

ARIZONA PUBLIC SERVICE COMPANY

DSM SEMI-ANNUAL PROGRESS REPORT FOR THE PERIOD:
JANUARY THROUGH JUNE 2008

Division	Size	Project Type	# of Applications	# of Students
Metro	>200	Prescriptive & Custom Measures - Retrofit	18	36,500
Metro	>200	Prescriptive Measures - New Construction & Retrofit	3	36,000
Metro	>200	Prescriptive & Custom Measures - Retrofit	2	33,914
Metro	>200	Prescriptive & Custom Measures - Retrofit	3	25,322
Metro	>200	Prescriptive & Custom Measures - New Construction	4	22,325
Metro	>200	Prescriptive Measures - Retrofit	1	13,800
Metro	>200	Custom Measures - Retrofit	1	13,563
Non-Metro	>200	Prescriptive Measures - New Construction	1	10,500
Metro	>200	Prescriptive Measures - Retrofit	5	8,553
Non-Metro	>200	Technical Assistance & Studies	1	7,240
Metro	>200	Prescriptive & Custom Measures - Retrofit Technical Assistance & Studies	14	5,298
Metro	>200	Prescriptive Measures - New Construction	1	4,554
Metro	>200	Prescriptive & Custom Measures - Retrofit	2	3,800
Non-Metro	>200	Prescriptive Measures - Retrofit Technical Assistance & Studies	2	3,522
Metro	>200	Prescriptive Measures - New Construction	1	3,200
Non-Metro	>200	Technical Assistance & Studies	1	2,790
Metro	>200	Technical Assistance & Studies	1	2,437
Non-Metro	>200	Prescriptive & Custom Measures - Retrofit	2	2,017
Metro	>200	Custom Measures - Retrofit	1	1,250
Non-Metro	<200	Prescriptive Measures - Retrofit	1	385
Non-Metro	>200	Technical Assistance & Studies	1	24

When an incentive application is received from a school district and deemed eligible, funding is first allocated from the Schools budget up to, a maximum of $25,000 or $15/student cap. Any additional funding required to cover the application is then allocated from the appropriate Large Existing, New Construction or Small Business program budget.

During this reporting period, $677,353 in incentives were paid to schools. The Schools Program incentives of $229,146 were paid under the schools program. The remaining $448,207 in incentives was paid to schools under the other non-residential programs (see table below).

Incentive Status by Fund for Active Applications	Incentives Paid
Schools Budget – Prescriptive & Custom	$215,426
Schools Budget – Feasibility, Commissioning and Retro-commissioning Studies	$13,720
Total School Funds	**$229,146**
Schools Summary:	
Schools – School Funds	$229,146
Schools – Large Existing Funds	$374,918
Schools – New Construction Funds	$65,339
Schools – Small Business Funds	$7,950
Total Paid to Schools	**$677,353**

During this reporting period, three schools received study incentives. Two of these studies were paid out of the Schools program. One of the study applications resulted in a verbal intention to implement the associated measures, and the other customer has not informed the program about implementing the associated measures to date.

Evaluation and Monitoring Activities and Results

During the current reporting period the Schools program MER research data collection and analysis activities included:

- Conducted detailed review and analysis of KEMA participation database.
- Developed detailed program analysis database and populated database with participation data, measure performance variables, and calculation algorithms.
- Completed detailed demand and energy savings analysis by measure, business type and program component.
- Revised schools savings parameters and assumptions to more accurately reflect school operating conditions including operating hours and coincidence with system peak.
- Assessed net-to-gross factors including spillover and free-ridership.
- Conducted benefit/cost analysis.
- Prepared Solutions For Business MER report for 2005 – 2007 activities.

MER Adjusted kW and kWh Savings

The following table reflects the total energy and demand saving achievements in the first half of 2008 for schools projects. Only actual savings from projects that are completed and incentives paid will be counted in this report.

MER Adjusted kW and kWh Savings*

	kW Savings **	Annual kWh Savings	Lifetime kWh Savings
Schools – School Funds	172	2,812,400	41,710,760
Schools – Large Existing Funds	247	4,145,925	67,255,792
Schools – New Construction Funds	56	921,153	13,927,153
Schools – Small Business Funds	0	50,026	562,650
Total Attributable to Schools	475	7,929,504	123,456,355

*Includes adjustments to savings as described in the Solutions for Business Program Impact and Evaluation MER Report.

**kW is coincident peak

All final saving values are adjusted for line losses (9.8%).

Benefits and Net Benefits/Performance Incentive Calculation

The benefits and net benefits are provided in Table 2. The details for the Performance Incentive calculation are provided in Table 3.

Problems Encountered and Proposed Solutions

While school districts have received a large share of incentives, the Company would like to see greater participation by smaller districts that claim they lack the funds for energy efficiency projects. As a result, APS filed an addendum to its 13 month filing that requested making schools eligible for the "Direct Install" measure proposed for the Small Business program. This would lower up-front cost for these school projects, and shift documentation requirements from the school districts to the participating contractors. Schools would still be eligible to participate in the broader program.

The Schools program also has the Custom Measure and Studies issues as discussed earlier in the Large Existing Facilities and New Construction Program sections.

Costs Incurred

Program costs incurred during the first half of 2008 are listed below:

DSM Program	Rebates & Incentives	Training & Technical Assistance	Consumer Education	Program Implement*	Program Marketing	Planning & Admin	Program Total Cost
Schools	$229,146	$2,235	$2,867	$70,469	$14,574	$0	$319,291

Findings from all Research Projects

There were no findings from any Research Projects during this reporting period.

Other Significant Information

In addition to many of the Marketing Outreach activities described for the Large Existing program, marketing activities associated with the Schools program consisted of two areas of focus:

1. **Trade Ally Development:** Trade Ally recruitment focused on one-on-one development and training. Several meetings were held with individual potential trade allies, and program staff worked with existing trade allies to streamline application processes. These individual meetings allowed program staff to address the specific needs and opportunities of schools and the trade ally.
2. **Customer awareness and project generation:** One-on-one meetings were held with several school districts in an effort to identify potential projects. The Solutions for Business program also purchased a booth for the Arizona Association of School Business Officials (AASBO) annual meeting, to be held in Tucson in July 2008.

Schools Program Participation in this Reporting Period: Direct marketing of the DSM program to 16 school districts, including 6 Rural and Non-metro and 10 Metro school districts was completed during the reporting timeframe. The Solutions for Business program continues to contract with the Department of Commerce Energy Office for rural school outreach. During this reporting period the Energy Office was supporting the Arizona School Facilities Board's school grant program and the rural outreach officer position was vacant for part of this time. For this reason, meetings with school districts declined during this reporting period.